

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

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Peachtree City, GA 30269

Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: LUMARK

Report Number: P1503457

Luminaire Tested: PRV-P-PB1B-750-U-T4RE-HSS

Issue Date: 07/22/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1503457  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 7/22/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: LUMARK  
Catalog Number: PRV-P-PB1B-750-U-T4RE-HSS  
Description: PREVAIL PETITE DISCRETE LED 1 SQUARE AT 1470MA 70CRI 5000K FIXTURE w/ TYPE IV  
ROADWAY ILLUMINANCE DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD  
Light Source: (10) 5000K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4574.8 lumens  
Efficiency: N/A  
Efficacy: 87.1 lumens/watt  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G2

Input Watts (W): 52.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.97  
Total Harmonic Distortion (THDi): 6.0%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT

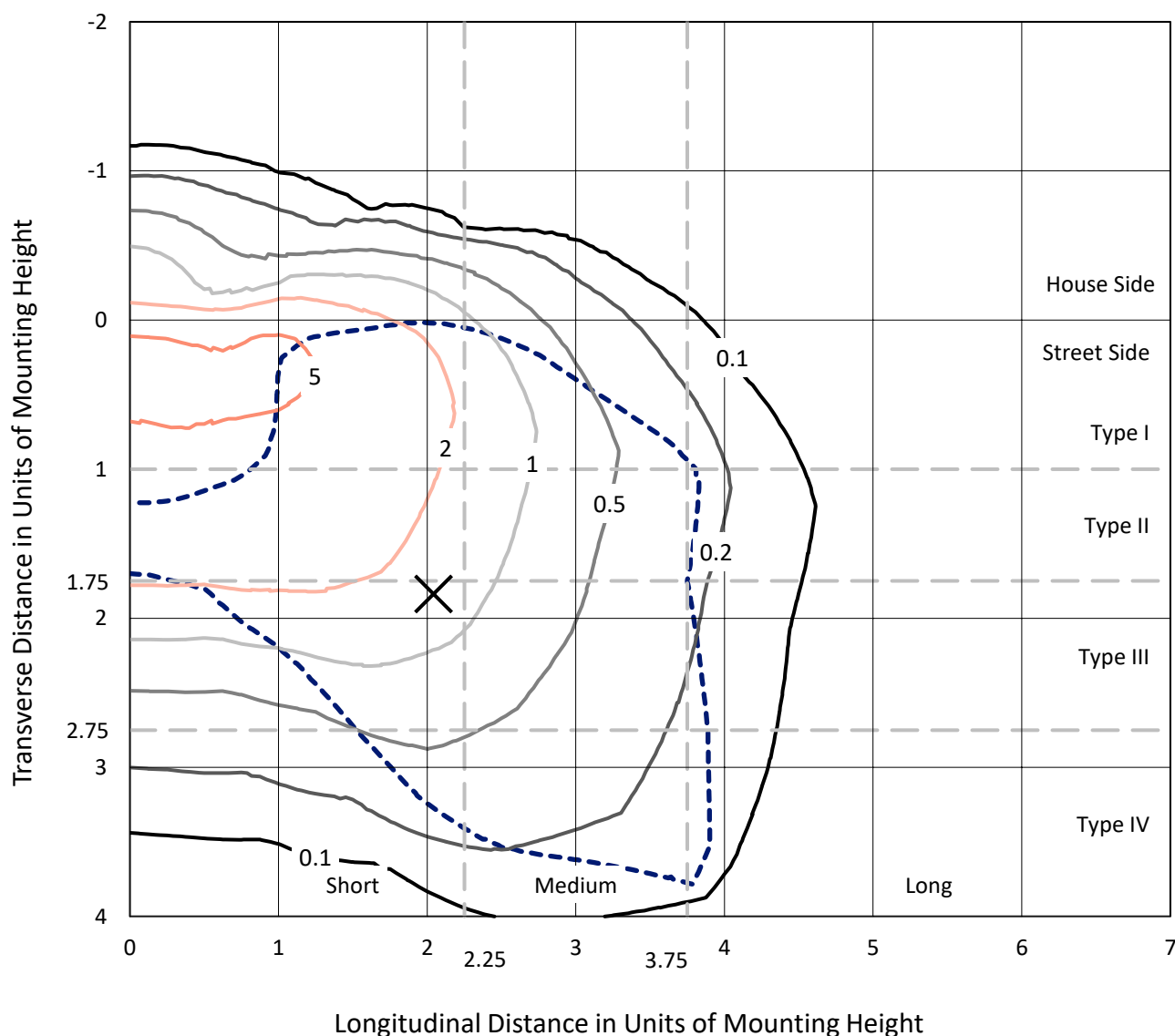
REPORT NUMBER: P1503457

CATALOG NUMBER: PRV-P-PB1B-750-U-T4RE-HSS

## Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

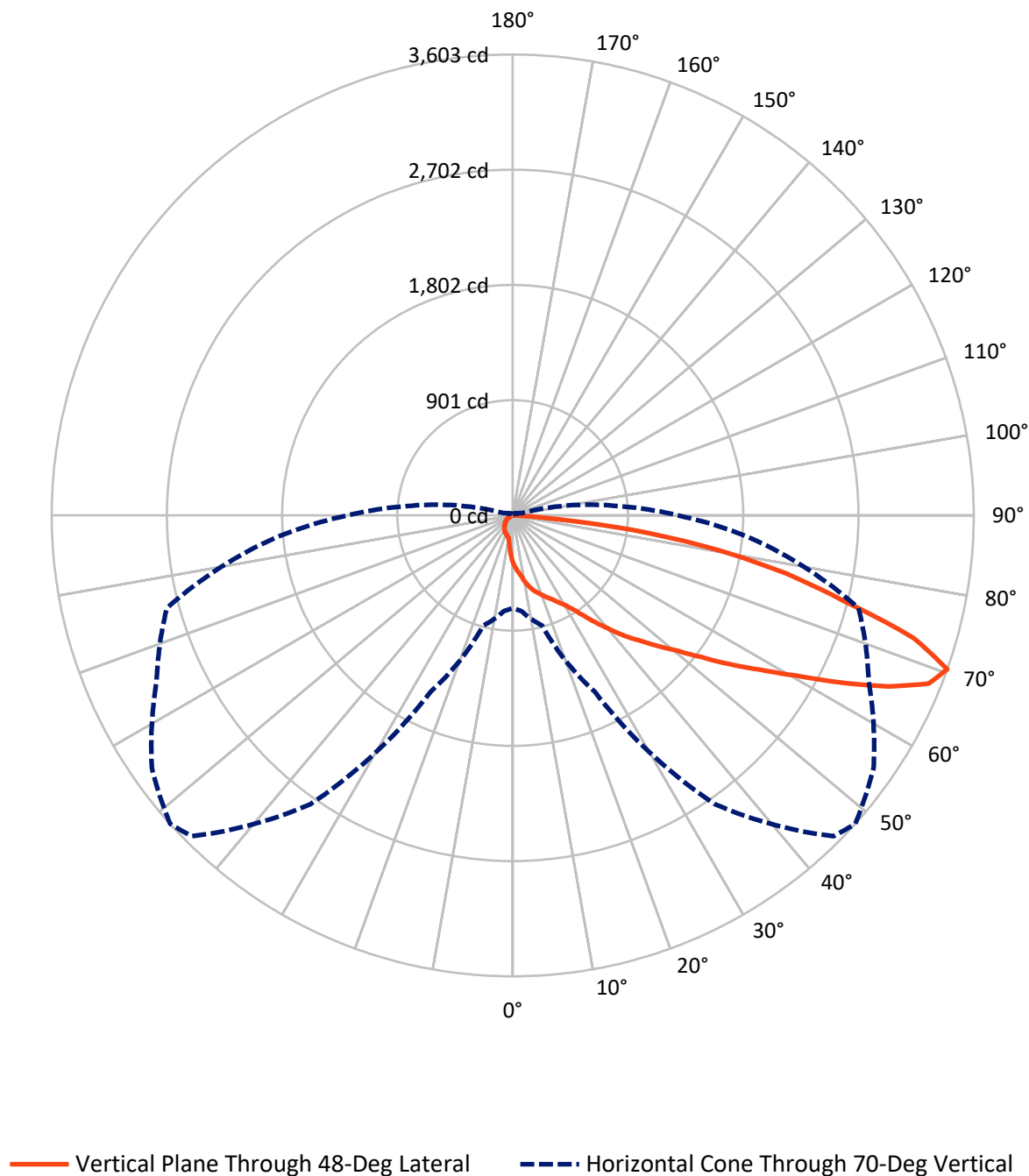


Based on 10 foot mounting height. Maximum calculated value = 6.1 fc  
 Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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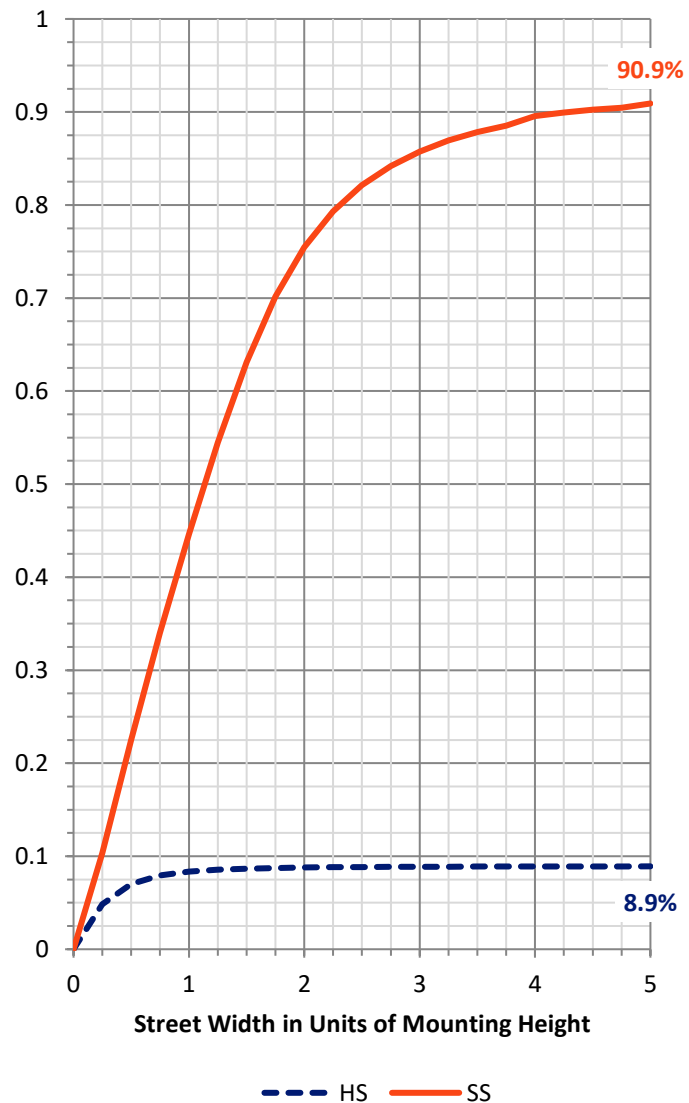
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 410.7    | 0.0    | 410.7  |
|                    | % Fixture | 9.0      | 0.0    | 9.0    |
| <b>Street Side</b> | Lumens    | 4164.1   | 0.0    | 4164.1 |
|                    | % Fixture | 91.0     | 0.0    | 91.0   |
| <b>Total</b>       | Lumens    | 4574.8   | 0.0    | 4574.8 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 34.4   | 0.8       |
| 10°-20°   | 109.8  | 2.4       |
| 20°-30°   | 199.5  | 4.4       |
| 30°-40°   | 340.5  | 7.4       |
| 40°-50°   | 626.9  | 13.7      |
| 50°-60°   | 1020.8 | 22.3      |
| 60°-70°   | 1296.4 | 28.3      |
| 70°-80°   | 848.5  | 18.5      |
| 80°-90°   | 97.8   | 2.1       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-90°    | 4574.8 | 100.0     |
| 0°-180°   | 4574.8 | 100.0     |

**Coefficient of Utilization**



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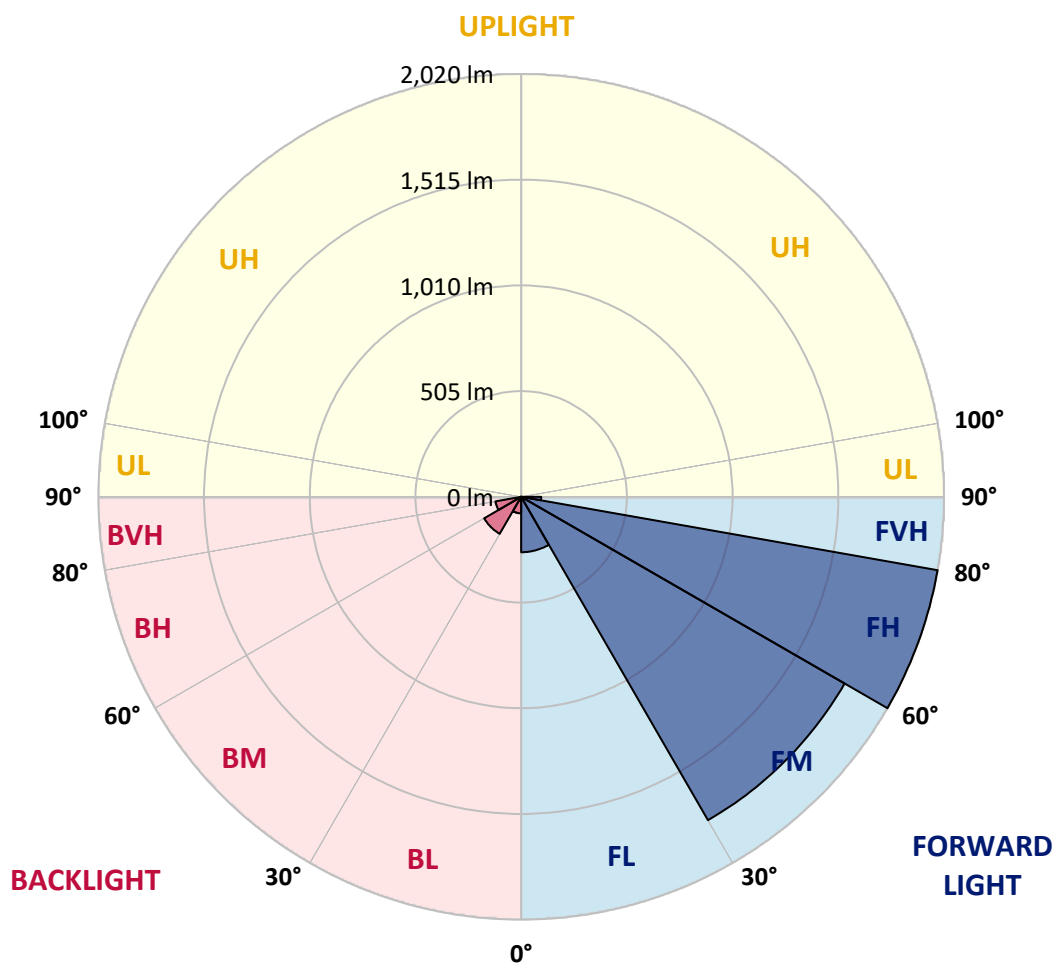
CATALOG NUMBER: PRV-P-PB1B-750-U-T4RE-HSS

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 264.7  | 5.8       |                         |      |         |
| FM   | (30°-60°)   | 1783.9 | 39.0      |                         |      |         |
| FH   | (60°-80°)   | 2020.0 | 44.2      |                         |      | G2/5000 |
| FVH  | (80°-90°)   | 95.4   | 2.1       |                         |      | G1/100  |
| BL   | (0°-30°)    | 79.0   | 1.7       | B0/110                  |      |         |
| BM   | (30°-60°)   | 204.4  | 4.5       | B0/220                  |      |         |
| BH   | (60°-80°)   | 124.9  | 2.7       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 2.4    | 0.1       |                         |      | G0/10   |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G2**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 48°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  | 370.1  |
| 2.5°  | 422.5  | 422.5  | 421.1  | 419.7  | 416.9  | 411.2  | 408.4  | 402.7  | 395.6  | 387.1  | 377.2  |
| 5°    | 477.8  | 470.8  | 473.6  | 467.9  | 456.6  | 443.8  | 441.0  | 431.1  | 416.9  | 401.3  | 382.8  |
| 7.5°  | 541.7  | 541.7  | 534.6  | 526.1  | 511.9  | 484.9  | 477.8  | 459.4  | 436.7  | 414.0  | 385.7  |
| 10°   | 592.7  | 589.9  | 585.6  | 578.5  | 565.8  | 536.0  | 527.5  | 503.4  | 460.8  | 426.8  | 391.4  |
| 12.5° | 623.9  | 621.1  | 618.2  | 612.5  | 599.8  | 581.4  | 571.4  | 548.7  | 496.3  | 443.8  | 401.3  |
| 15°   | 645.2  | 643.7  | 640.9  | 638.1  | 628.1  | 616.8  | 606.9  | 589.9  | 540.2  | 472.2  | 415.5  |
| 17.5° | 656.5  | 656.5  | 656.5  | 656.5  | 653.7  | 642.3  | 636.7  | 625.3  | 585.6  | 503.4  | 429.6  |
| 20°   | 670.7  | 672.1  | 672.1  | 674.9  | 674.9  | 672.1  | 666.4  | 659.3  | 629.6  | 544.5  | 446.7  |
| 22.5° | 686.3  | 689.1  | 692.0  | 697.6  | 699.0  | 699.0  | 697.6  | 693.4  | 672.1  | 591.3  | 466.5  |
| 25°   | 710.4  | 710.4  | 713.2  | 721.7  | 728.8  | 734.5  | 730.2  | 731.7  | 713.2  | 643.7  | 490.6  |
| 27.5° | 751.5  | 745.8  | 747.3  | 751.5  | 762.8  | 771.4  | 771.4  | 771.4  | 758.6  | 699.0  | 520.4  |
| 30°   | 792.6  | 792.6  | 795.5  | 795.5  | 805.4  | 818.1  | 816.7  | 821.0  | 808.2  | 761.4  | 558.7  |
| 32.5° | 845.1  | 845.1  | 846.5  | 853.6  | 864.9  | 879.1  | 879.1  | 894.7  | 877.7  | 832.3  | 614.0  |
| 35°   | 904.6  | 906.1  | 917.4  | 931.6  | 942.9  | 961.4  | 967.0  | 988.3  | 979.8  | 934.4  | 692.0  |
| 37.5° | 971.3  | 975.5  | 992.6  | 1015.2 | 1022.3 | 1057.8 | 1067.7 | 1087.6 | 1111.7 | 1104.6 | 830.9  |
| 40°   | 1046.4 | 1047.9 | 1070.5 | 1101.7 | 1117.3 | 1157.0 | 1171.2 | 1215.2 | 1276.1 | 1305.9 | 1036.5 |
| 42.5° | 1171.2 | 1165.5 | 1172.6 | 1209.5 | 1213.8 | 1264.8 | 1290.3 | 1347.0 | 1444.9 | 1525.7 | 1250.6 |
| 45°   | 1369.7 | 1358.4 | 1330.0 | 1313.0 | 1291.7 | 1369.7 | 1398.1 | 1473.2 | 1634.9 | 1722.8 | 1446.3 |
| 47.5° | 1578.2 | 1564.0 | 1525.7 | 1491.7 | 1422.2 | 1490.3 | 1524.3 | 1620.7 | 1795.1 | 1898.6 | 1603.7 |
| 50°   | 1756.8 | 1751.2 | 1722.8 | 1687.3 | 1607.9 | 1630.6 | 1661.8 | 1792.3 | 1951.1 | 2084.4 | 1748.3 |
| 52.5° | 1887.3 | 1883.0 | 1878.8 | 1884.4 | 1816.4 | 1816.4 | 1836.2 | 1966.7 | 2104.2 | 2233.3 | 1874.5 |
| 55°   | 1983.7 | 1987.9 | 1992.2 | 2041.8 | 2024.8 | 2013.5 | 2051.8 | 2149.6 | 2264.4 | 2382.1 | 1983.7 |
| 57.5° | 1968.1 | 1982.3 | 2094.3 | 2192.1 | 2217.7 | 2258.8 | 2273.0 | 2348.1 | 2433.2 | 2538.1 | 2091.5 |
| 60°   | 1749.7 | 1771.0 | 1948.2 | 2338.2 | 2444.5 | 2522.5 | 2540.9 | 2572.1 | 2609.0 | 2725.3 | 2251.7 |
| 62.5° | 1520.0 | 1537.0 | 1693.0 | 2314.1 | 2689.8 | 2865.6 | 2874.2 | 2877.0 | 2843.0 | 2956.4 | 2385.0 |
| 65°   | 1320.1 | 1337.1 | 1463.3 | 2102.8 | 2901.1 | 3225.8 | 3224.4 | 3162.0 | 3086.8 | 3074.1 | 2339.6 |
| 67.5° | 1029.4 | 1056.4 | 1208.1 | 1803.6 | 2929.5 | 3512.2 | 3506.6 | 3396.0 | 3224.4 | 3007.4 | 2129.7 |
| 70°   | 726.0  | 748.7  | 891.9  | 1522.9 | 2755.1 | 3546.3 | 3603.0 | 3442.7 | 3069.8 | 2797.6 | 1823.5 |
| 72.5° | 577.1  | 599.8  | 697.6  | 1225.1 | 2603.3 | 3245.7 | 3278.3 | 3084.0 | 2692.7 | 2421.8 | 1398.1 |
| 75°   | 343.1  | 371.5  | 477.8  | 876.3  | 2355.2 | 2742.3 | 2672.8 | 2596.2 | 2165.2 | 2012.1 | 1022.3 |
| 77.5° | 148.9  | 165.9  | 243.9  | 467.9  | 1636.3 | 2287.1 | 2185.0 | 1941.2 | 1500.2 | 1357.0 | 570.0  |
| 80°   | 70.9   | 75.2   | 90.7   | 188.6  | 779.9  | 1637.7 | 1612.2 | 1314.4 | 826.7  | 639.5  | 208.4  |
| 82.5° | 36.9   | 38.3   | 53.9   | 78.0   | 252.4  | 864.9  | 955.7  | 747.3  | 333.2  | 184.3  | 39.7   |
| 85°   | 14.2   | 17.0   | 22.7   | 36.9   | 46.8   | 195.7  | 228.3  | 251.0  | 102.1  | 35.4   | 17.0   |
| 87.5° | 1.4    | 2.8    | 4.3    | 5.7    | 7.1    | 8.5    | 8.5    | 9.9    | 8.5    | 4.3    | 2.8    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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CATALOG NUMBER: PRV-P-PB1B-750-U-T4RE-HSS

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°    | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 370.1  | 370.1  | 370.1 | 370.1 | 370.1 | 370.1 | 370.1 | 370.1 | 370.1 | 370.1 | 370.1 |
| 2.5°  | 371.5  | 365.8  | 351.6 | 341.7 | 329.0 | 316.2 | 309.1 | 299.2 | 294.9 | 296.3 | 294.9 |
| 5°    | 370.1  | 358.7  | 330.4 | 300.6 | 279.3 | 256.6 | 245.3 | 231.1 | 226.9 | 222.6 | 226.9 |
| 7.5°  | 370.1  | 350.2  | 306.3 | 263.7 | 232.5 | 211.3 | 197.1 | 190.0 | 187.2 | 187.2 | 187.2 |
| 10°   | 370.1  | 341.7  | 283.6 | 231.1 | 197.1 | 180.1 | 177.2 | 178.7 | 180.1 | 181.5 | 181.5 |
| 12.5° | 372.9  | 337.5  | 259.5 | 204.2 | 173.0 | 168.7 | 171.6 | 174.4 | 177.2 | 177.2 | 178.7 |
| 15°   | 378.6  | 334.6  | 241.0 | 180.1 | 164.5 | 164.5 | 165.9 | 168.7 | 171.6 | 173.0 | 173.0 |
| 17.5° | 387.1  | 331.8  | 221.2 | 165.9 | 158.8 | 158.8 | 160.2 | 161.6 | 165.9 | 167.3 | 167.3 |
| 20°   | 395.6  | 329.0  | 204.2 | 157.4 | 154.6 | 154.6 | 154.6 | 156.0 | 158.8 | 160.2 | 160.2 |
| 22.5° | 406.9  | 327.5  | 185.7 | 151.7 | 148.9 | 148.9 | 148.9 | 148.9 | 150.3 | 151.7 | 151.7 |
| 25°   | 418.3  | 326.1  | 168.7 | 146.0 | 144.6 | 143.2 | 141.8 | 141.8 | 141.8 | 143.2 | 143.2 |
| 27.5° | 432.5  | 324.7  | 153.1 | 139.0 | 137.5 | 136.1 | 136.1 | 133.3 | 134.7 | 136.1 | 134.7 |
| 30°   | 452.3  | 324.7  | 141.8 | 131.9 | 129.0 | 129.0 | 127.6 | 124.8 | 126.2 | 126.2 | 126.2 |
| 32.5° | 484.9  | 336.1  | 136.1 | 124.8 | 120.5 | 120.5 | 117.7 | 116.3 | 116.3 | 116.3 | 116.3 |
| 35°   | 534.6  | 363.0  | 137.5 | 121.9 | 114.9 | 110.6 | 107.8 | 106.3 | 104.9 | 103.5 | 103.5 |
| 37.5° | 615.4  | 398.4  | 147.5 | 123.4 | 109.2 | 103.5 | 99.3  | 95.0  | 92.2  | 89.3  | 87.9  |
| 40°   | 762.8  | 486.4  | 161.6 | 129.0 | 104.9 | 95.0  | 89.3  | 82.2  | 76.6  | 73.7  | 70.9  |
| 42.5° | 931.6  | 599.8  | 181.5 | 133.3 | 102.1 | 86.5  | 78.0  | 69.5  | 63.8  | 59.6  | 58.1  |
| 45°   | 1076.2 | 710.4  | 228.3 | 134.7 | 96.4  | 79.4  | 68.1  | 58.1  | 53.9  | 49.6  | 48.2  |
| 47.5° | 1185.4 | 794.0  | 276.5 | 131.9 | 92.2  | 72.3  | 58.1  | 49.6  | 45.4  | 41.1  | 39.7  |
| 50°   | 1287.5 | 860.7  | 311.9 | 124.8 | 87.9  | 65.2  | 49.6  | 42.5  | 38.3  | 35.4  | 34.0  |
| 52.5° | 1366.9 | 911.7  | 336.1 | 116.3 | 82.2  | 58.1  | 44.0  | 36.9  | 32.6  | 31.2  | 31.2  |
| 55°   | 1442.0 | 962.8  | 353.1 | 110.6 | 75.2  | 49.6  | 38.3  | 34.0  | 29.8  | 28.4  | 28.4  |
| 57.5° | 1511.5 | 1020.9 | 380.0 | 104.9 | 63.8  | 44.0  | 34.0  | 31.2  | 28.4  | 25.5  | 24.1  |
| 60°   | 1637.7 | 1140.0 | 399.9 | 85.1  | 52.5  | 38.3  | 31.2  | 28.4  | 25.5  | 22.7  | 22.7  |
| 62.5° | 1738.4 | 1209.5 | 341.7 | 55.3  | 44.0  | 34.0  | 29.8  | 25.5  | 22.7  | 19.9  | 19.9  |
| 65°   | 1695.9 | 1158.5 | 235.4 | 44.0  | 36.9  | 31.2  | 25.5  | 22.7  | 18.4  | 15.6  | 15.6  |
| 67.5° | 1531.4 | 1025.2 | 141.8 | 36.9  | 31.2  | 26.9  | 22.7  | 18.4  | 14.2  | 11.3  | 11.3  |
| 70°   | 1290.3 | 829.5  | 73.7  | 31.2  | 25.5  | 21.3  | 17.0  | 14.2  | 9.9   | 8.5   | 7.1   |
| 72.5° | 998.2  | 558.7  | 36.9  | 26.9  | 22.7  | 18.4  | 14.2  | 11.3  | 7.1   | 5.7   | 4.3   |
| 75°   | 689.1  | 348.8  | 28.4  | 22.7  | 18.4  | 14.2  | 11.3  | 8.5   | 4.3   | 2.8   | 2.8   |
| 77.5° | 363.0  | 171.6  | 22.7  | 19.9  | 15.6  | 12.8  | 8.5   | 5.7   | 2.8   | 1.4   | 1.4   |
| 80°   | 136.1  | 51.0   | 18.4  | 15.6  | 12.8  | 9.9   | 5.7   | 2.8   | 1.4   | 0.0   | 0.0   |
| 82.5° | 25.5   | 15.6   | 11.3  | 11.3  | 8.5   | 5.7   | 2.8   | 1.4   | 0.0   | 0.0   | 0.0   |
| 85°   | 12.8   | 8.5    | 4.3   | 4.3   | 2.8   | 1.4   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   |
| 87.5° | 2.8    | 2.8    | 1.4   | 1.4   | 1.4   | 1.4   | 1.4   | 0.0   | 0.0   | 0.0   | 0.0   |
| 90°   | 0.0    | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGraw-Edison

Report Number: SP2-2501-321-5

Test Date: 04/10/2025

Luminaire Tested: GKO-PB1E-750-U-T4W

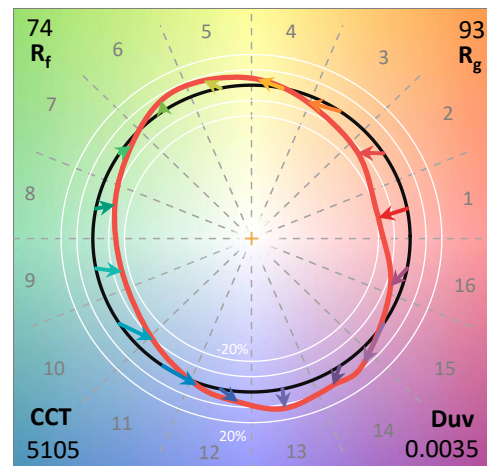
Data in this report applies to families of products including GKO-PB1E-750-U-T4W

### Test Information

Test Method: LM-79-2019  
 Report Number: SP2-2501-321-5  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP2 - 165CM SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 04/10/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: McGraw-Edison  
 Catalog Number: **GKO-PB1E-750-U-T4W**  
 Description: Gekko Wedge Wall Pack Fixture 1 SQ w/ T4W distribution

### Spectral Parameters

|                           |          |           |      |      |       |
|---------------------------|----------|-----------|------|------|-------|
| CCT (K):                  | 5105     | CRI (Ra): | 72.2 |      |       |
| CIE u':                   | 0.2079   | R1:       | 68.8 | R9:  | -38.2 |
| CIE v':                   | 0.4868   | R2:       | 78.3 | R10: | 48.2  |
| Duv:                      | 0.0035   | R3:       | 84.9 | R11: | 68.1  |
| CIE x:                    | 0.3428   | R4:       | 71.7 | R12: | 42.9  |
| CIE y:                    | 0.3567   | R5:       | 69.8 | R13: | 70.6  |
| CIE z:                    | 0.3005   | R6:       | 69.8 | R14: | 91.6  |
| Peak Wavelength (nm):     | 451      | R7:       | 81.2 | R15: | 61.7  |
| Dominant Wavelength (nm): | 567      | R8:       | 53.5 |      |       |
| Purity:                   | 9.884628 |           |      |      |       |
| Rf:                       | 74.2     |           |      |      |       |
| Rg:                       | 92.7     |           |      |      |       |



### Test Conditions

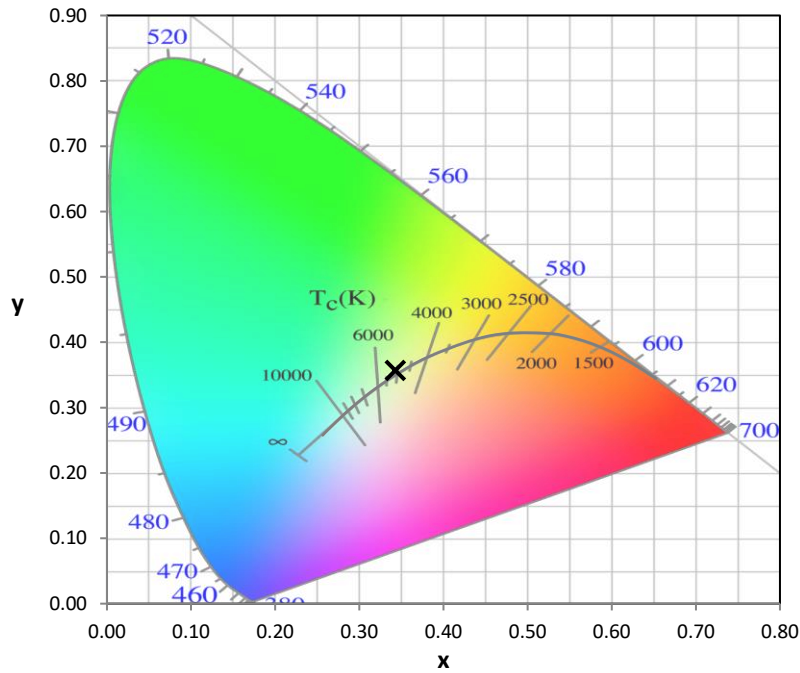
Stabilization Time: 30M  
 Operation Time: 1H 30M  
 Sphere Temperature (°C): 25.0

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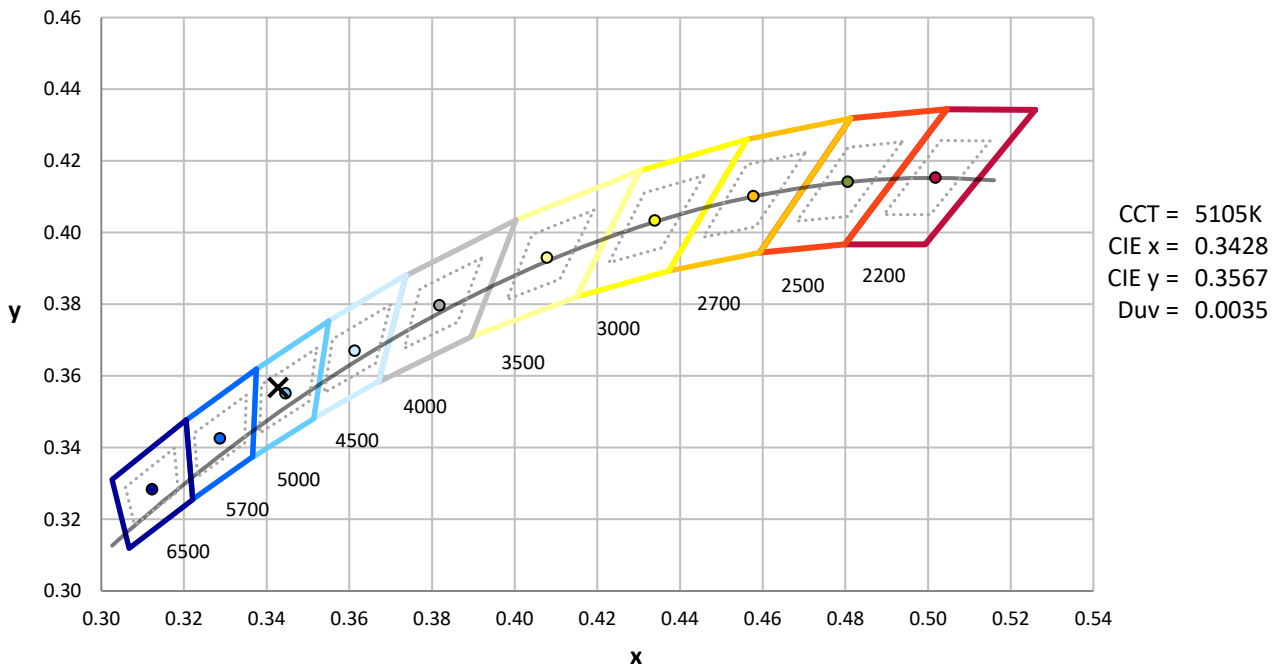
| Measurement and Test Equipment |                       |                  |                      |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument                     | Identification Number | Calibration Date | Calibration Due Date |
| Photometer                     | IN2187                | 1/6/2025         | 7/6/2025             |
| Power Meter                    | INXT2011002           | 1/21/2025        | 1/21/2026            |
| AC Power Source                | IN0458                | 10/22/2024       | 10/22/2025           |
| DC Power Source                | IN0212                | 10/22/2024       | 10/22/2025           |
| Sphere Thermometer             | IN4036B               | 10/22/2024       | 10/22/2025           |
| Room Thermometer               | IN0046                | 10/22/2024       | 10/22/2025           |

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**CIE 1931 Chromaticity Diagram**



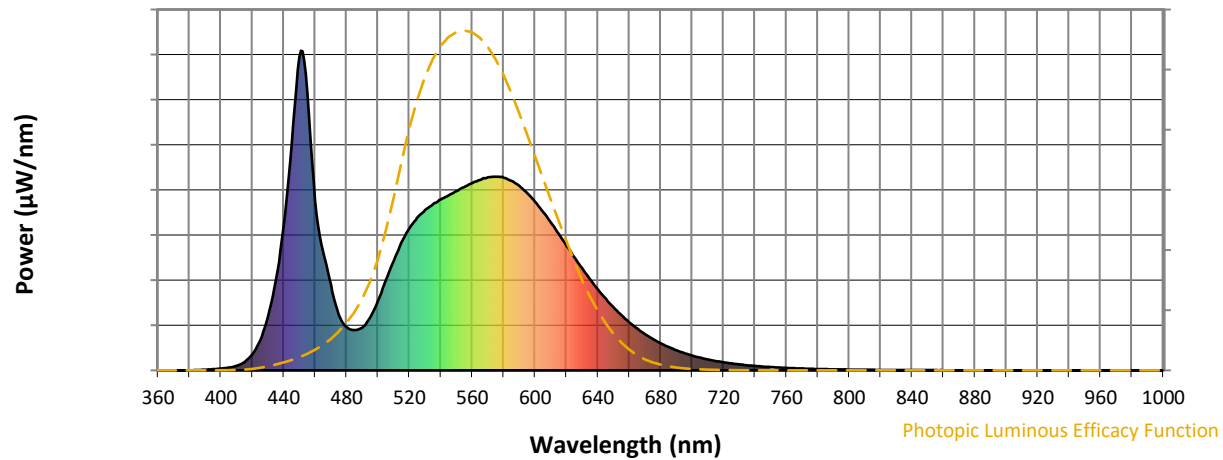
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 5000K 4-step quadrangle

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### Photopic Flux vs. Wavelength

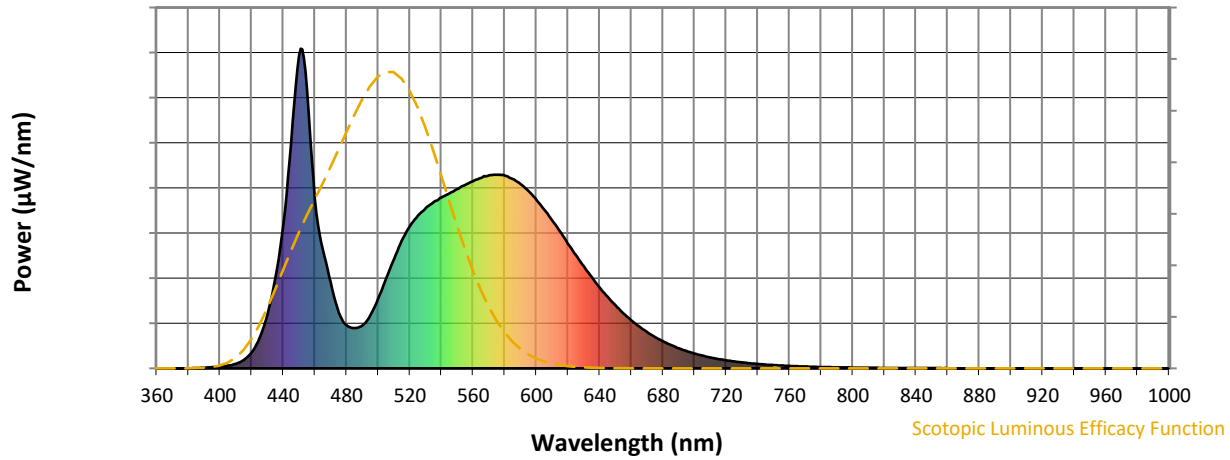


### Photopic Lumens: NR

| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 134                         | NR               | 620       | 390                         | NR               | 750       | 10                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 165                         | NR               | 625       | 354                         | NR               | 755       | 9                           | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 218                         | NR               | 630       | 319                         | NR               | 760       | 8                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 281                         | NR               | 635       | 285                         | NR               | 765       | 7                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 343                         | NR               | 640       | 254                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 400                         | NR               | 645       | 224                         | NR               | 775       | 5                           | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 444                         | NR               | 650       | 197                         | NR               | 780       | 4                           | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 477                         | NR               | 655       | 173                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 501                         | NR               | 660       | 150                         | NR               | 790       | 3                           | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 520                         | NR               | 665       | 131                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 14                          | NR               | 540       | 534                         | NR               | 670       | 113                         | NR               | 800       | 2                           | NR               | 930       | 0                           | NR               |
| 415       | 26                          | NR               | 545       | 547                         | NR               | 675       | 98                          | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 50                          | NR               | 550       | 561                         | NR               | 680       | 85                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 95                          | NR               | 555       | 574                         | NR               | 685       | 73                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 168                         | NR               | 560       | 586                         | NR               | 690       | 63                          | NR               | 820       | 1                           | NR               | 950       | 0                           | NR               |
| 435       | 284                         | NR               | 565       | 596                         | NR               | 695       | 54                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 452                         | NR               | 570       | 604                         | NR               | 700       | 46                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 705                         | NR               | 575       | 606                         | NR               | 705       | 40                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 980                         | NR               | 580       | 603                         | NR               | 710       | 34                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 869                         | NR               | 585       | 592                         | NR               | 715       | 29                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 531                         | NR               | 590       | 577                         | NR               | 720       | 25                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 372                         | NR               | 595       | 554                         | NR               | 725       | 22                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 268                         | NR               | 600       | 527                         | NR               | 730       | 19                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 174                         | NR               | 605       | 497                         | NR               | 735       | 16                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 135                         | NR               | 610       | 462                         | NR               | 740       | 14                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 126                         | NR               | 615       | 428                         | NR               | 745       | 12                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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### Scotopic Flux vs. Wavelength



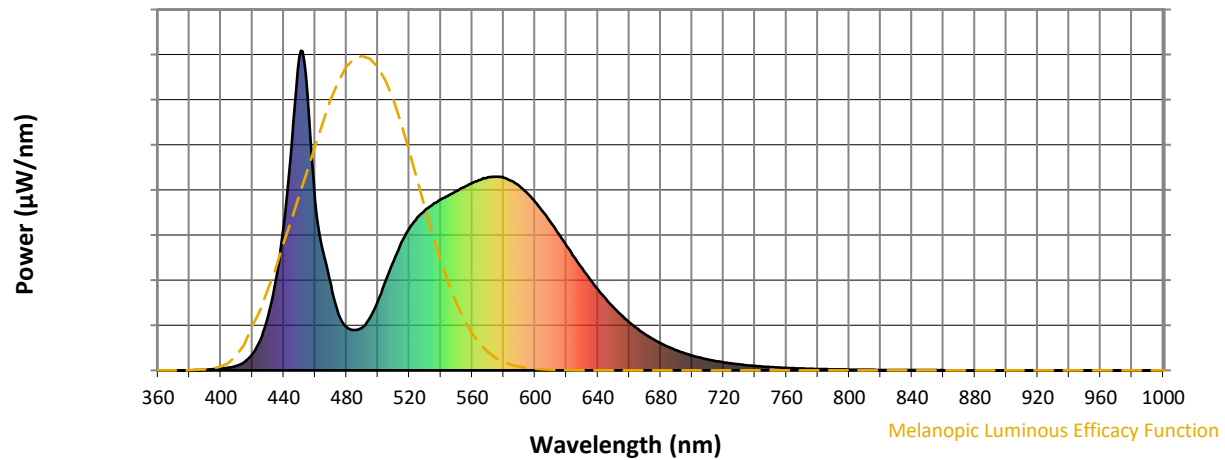
Scotopic Lumens: NR

S/P: 1.82

| λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) | λ (nm) | Power W <sup>^</sup> /nm | Lumens (Φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360    | 0                        | NR            | 490    | 134                      | NR            | 620    | 390                      | NR            | 750    | 10                       | NR            | 880    | 0                        | NR            |
| 365    | 0                        | NR            | 495    | 165                      | NR            | 625    | 354                      | NR            | 755    | 9                        | NR            | 885    | 0                        | NR            |
| 370    | 0                        | NR            | 500    | 218                      | NR            | 630    | 319                      | NR            | 760    | 8                        | NR            | 890    | 0                        | NR            |
| 375    | 0                        | NR            | 505    | 281                      | NR            | 635    | 285                      | NR            | 765    | 7                        | NR            | 895    | 0                        | NR            |
| 380    | 0                        | NR            | 510    | 343                      | NR            | 640    | 254                      | NR            | 770    | 6                        | NR            | 900    | 0                        | NR            |
| 385    | 1                        | NR            | 515    | 400                      | NR            | 645    | 224                      | NR            | 775    | 5                        | NR            | 905    | 0                        | NR            |
| 390    | 2                        | NR            | 520    | 444                      | NR            | 650    | 197                      | NR            | 780    | 4                        | NR            | 910    | 0                        | NR            |
| 395    | 4                        | NR            | 525    | 477                      | NR            | 655    | 173                      | NR            | 785    | 4                        | NR            | 915    | 0                        | NR            |
| 400    | 6                        | NR            | 530    | 501                      | NR            | 660    | 150                      | NR            | 790    | 3                        | NR            | 920    | 0                        | NR            |
| 405    | 9                        | NR            | 535    | 520                      | NR            | 665    | 131                      | NR            | 795    | 3                        | NR            | 925    | 0                        | NR            |
| 410    | 14                       | NR            | 540    | 534                      | NR            | 670    | 113                      | NR            | 800    | 2                        | NR            | 930    | 0                        | NR            |
| 415    | 26                       | NR            | 545    | 547                      | NR            | 675    | 98                       | NR            | 805    | 2                        | NR            | 935    | 0                        | NR            |
| 420    | 50                       | NR            | 550    | 561                      | NR            | 680    | 85                       | NR            | 810    | 2                        | NR            | 940    | 0                        | NR            |
| 425    | 95                       | NR            | 555    | 574                      | NR            | 685    | 73                       | NR            | 815    | 2                        | NR            | 945    | 0                        | NR            |
| 430    | 168                      | NR            | 560    | 586                      | NR            | 690    | 63                       | NR            | 820    | 1                        | NR            | 950    | 0                        | NR            |
| 435    | 284                      | NR            | 565    | 596                      | NR            | 695    | 54                       | NR            | 825    | 1                        | NR            | 955    | 0                        | NR            |
| 440    | 452                      | NR            | 570    | 604                      | NR            | 700    | 46                       | NR            | 830    | 1                        | NR            | 960    | 0                        | NR            |
| 445    | 705                      | NR            | 575    | 606                      | NR            | 705    | 40                       | NR            | 835    | 1                        | NR            | 965    | 0                        | NR            |
| 450    | 980                      | NR            | 580    | 603                      | NR            | 710    | 34                       | NR            | 840    | 1                        | NR            | 970    | 0                        | NR            |
| 455    | 869                      | NR            | 585    | 592                      | NR            | 715    | 29                       | NR            | 845    | 1                        | NR            | 975    | 0                        | NR            |
| 460    | 531                      | NR            | 590    | 577                      | NR            | 720    | 25                       | NR            | 850    | 1                        | NR            | 980    | 0                        | NR            |
| 465    | 372                      | NR            | 595    | 554                      | NR            | 725    | 22                       | NR            | 855    | 1                        | NR            | 985    | 0                        | NR            |
| 470    | 268                      | NR            | 600    | 527                      | NR            | 730    | 19                       | NR            | 860    | 1                        | NR            | 990    | 0                        | NR            |
| 475    | 174                      | NR            | 605    | 497                      | NR            | 735    | 16                       | NR            | 865    | 0                        | NR            | 995    | 0                        | NR            |
| 480    | 135                      | NR            | 610    | 462                      | NR            | 740    | 14                       | NR            | 870    | 0                        | NR            | 1000   | 0                        | NR            |
| 485    | 126                      | NR            | 615    | 428                      | NR            | 745    | 12                       | NR            | 875    | 0                        | NR            |        |                          |               |

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### Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.75

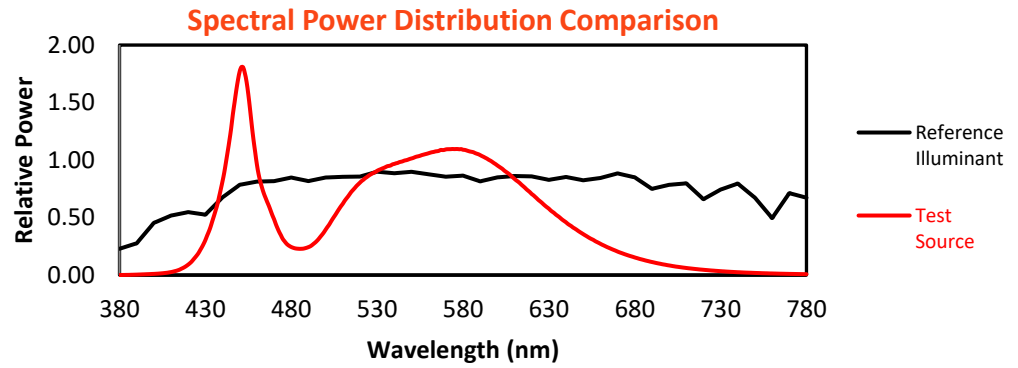
| λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) | λ<br>(nm) | Power<br>W <sup>^</sup> /nm | Lumens<br>(φ/nm) |
|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|-----------|-----------------------------|------------------|
| 360       | 0                           | NR               | 490       | 134                         | NR               | 620       | 390                         | NR               | 750       | 10                          | NR               | 880       | 0                           | NR               |
| 365       | 0                           | NR               | 495       | 165                         | NR               | 625       | 354                         | NR               | 755       | 9                           | NR               | 885       | 0                           | NR               |
| 370       | 0                           | NR               | 500       | 218                         | NR               | 630       | 319                         | NR               | 760       | 8                           | NR               | 890       | 0                           | NR               |
| 375       | 0                           | NR               | 505       | 281                         | NR               | 635       | 285                         | NR               | 765       | 7                           | NR               | 895       | 0                           | NR               |
| 380       | 0                           | NR               | 510       | 343                         | NR               | 640       | 254                         | NR               | 770       | 6                           | NR               | 900       | 0                           | NR               |
| 385       | 1                           | NR               | 515       | 400                         | NR               | 645       | 224                         | NR               | 775       | 5                           | NR               | 905       | 0                           | NR               |
| 390       | 2                           | NR               | 520       | 444                         | NR               | 650       | 197                         | NR               | 780       | 4                           | NR               | 910       | 0                           | NR               |
| 395       | 4                           | NR               | 525       | 477                         | NR               | 655       | 173                         | NR               | 785       | 4                           | NR               | 915       | 0                           | NR               |
| 400       | 6                           | NR               | 530       | 501                         | NR               | 660       | 150                         | NR               | 790       | 3                           | NR               | 920       | 0                           | NR               |
| 405       | 9                           | NR               | 535       | 520                         | NR               | 665       | 131                         | NR               | 795       | 3                           | NR               | 925       | 0                           | NR               |
| 410       | 14                          | NR               | 540       | 534                         | NR               | 670       | 113                         | NR               | 800       | 2                           | NR               | 930       | 0                           | NR               |
| 415       | 26                          | NR               | 545       | 547                         | NR               | 675       | 98                          | NR               | 805       | 2                           | NR               | 935       | 0                           | NR               |
| 420       | 50                          | NR               | 550       | 561                         | NR               | 680       | 85                          | NR               | 810       | 2                           | NR               | 940       | 0                           | NR               |
| 425       | 95                          | NR               | 555       | 574                         | NR               | 685       | 73                          | NR               | 815       | 2                           | NR               | 945       | 0                           | NR               |
| 430       | 168                         | NR               | 560       | 586                         | NR               | 690       | 63                          | NR               | 820       | 1                           | NR               | 950       | 0                           | NR               |
| 435       | 284                         | NR               | 565       | 596                         | NR               | 695       | 54                          | NR               | 825       | 1                           | NR               | 955       | 0                           | NR               |
| 440       | 452                         | NR               | 570       | 604                         | NR               | 700       | 46                          | NR               | 830       | 1                           | NR               | 960       | 0                           | NR               |
| 445       | 705                         | NR               | 575       | 606                         | NR               | 705       | 40                          | NR               | 835       | 1                           | NR               | 965       | 0                           | NR               |
| 450       | 980                         | NR               | 580       | 603                         | NR               | 710       | 34                          | NR               | 840       | 1                           | NR               | 970       | 0                           | NR               |
| 455       | 869                         | NR               | 585       | 592                         | NR               | 715       | 29                          | NR               | 845       | 1                           | NR               | 975       | 0                           | NR               |
| 460       | 531                         | NR               | 590       | 577                         | NR               | 720       | 25                          | NR               | 850       | 1                           | NR               | 980       | 0                           | NR               |
| 465       | 372                         | NR               | 595       | 554                         | NR               | 725       | 22                          | NR               | 855       | 1                           | NR               | 985       | 0                           | NR               |
| 470       | 268                         | NR               | 600       | 527                         | NR               | 730       | 19                          | NR               | 860       | 1                           | NR               | 990       | 0                           | NR               |
| 475       | 174                         | NR               | 605       | 497                         | NR               | 735       | 16                          | NR               | 865       | 0                           | NR               | 995       | 0                           | NR               |
| 480       | 135                         | NR               | 610       | 462                         | NR               | 740       | 14                          | NR               | 870       | 0                           | NR               | 1000      | 0                           | NR               |
| 485       | 126                         | NR               | 615       | 428                         | NR               | 745       | 12                          | NR               | 875       | 0                           | NR               |           |                             |                  |

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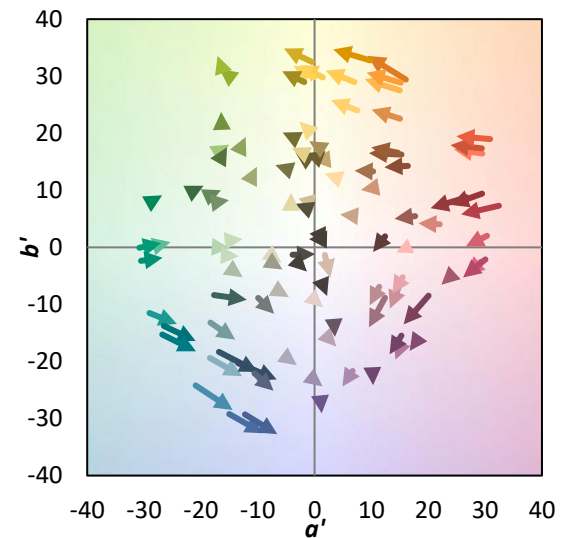
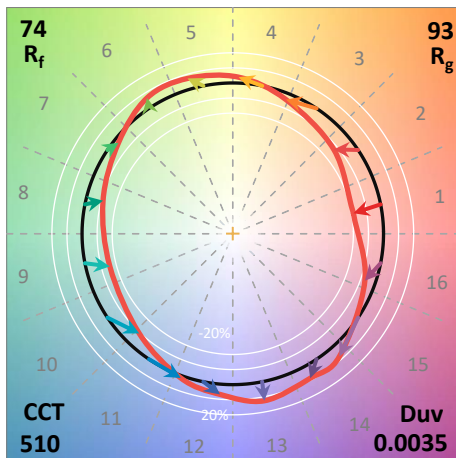
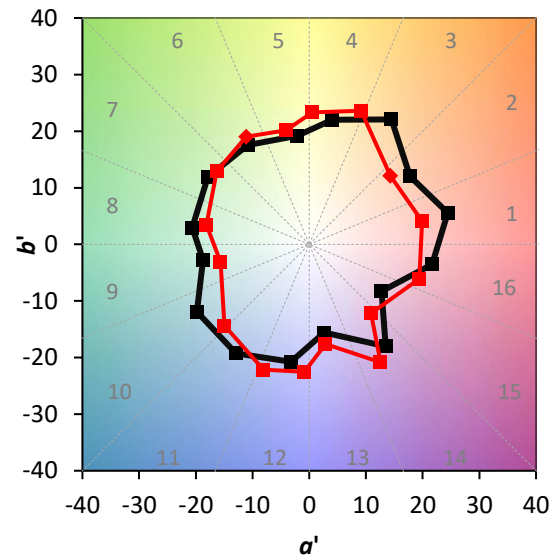
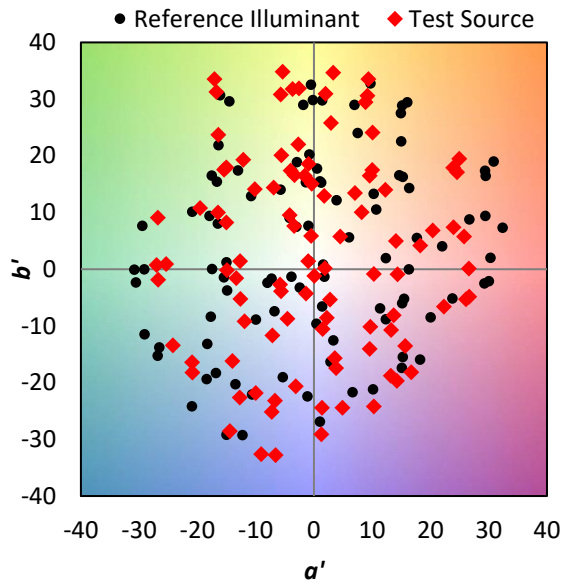
TM-30-18

### Summary

$R_f = 74.2$   
 $R_g = 92.7$   
 $CIE R_a = 72.2$   
 $R_g = -38.2$

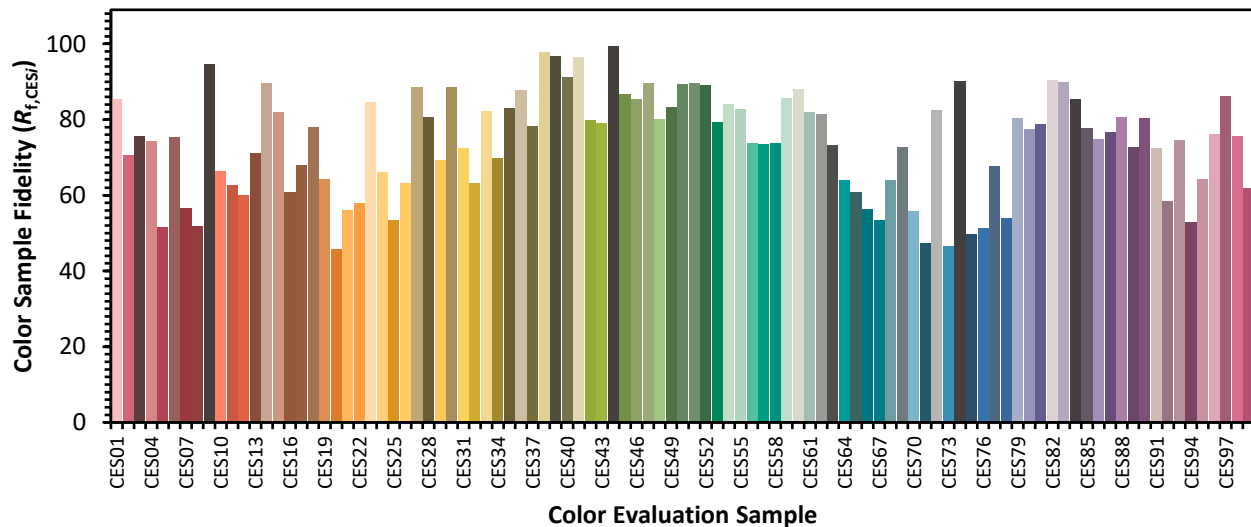


### Color Vector Graphics

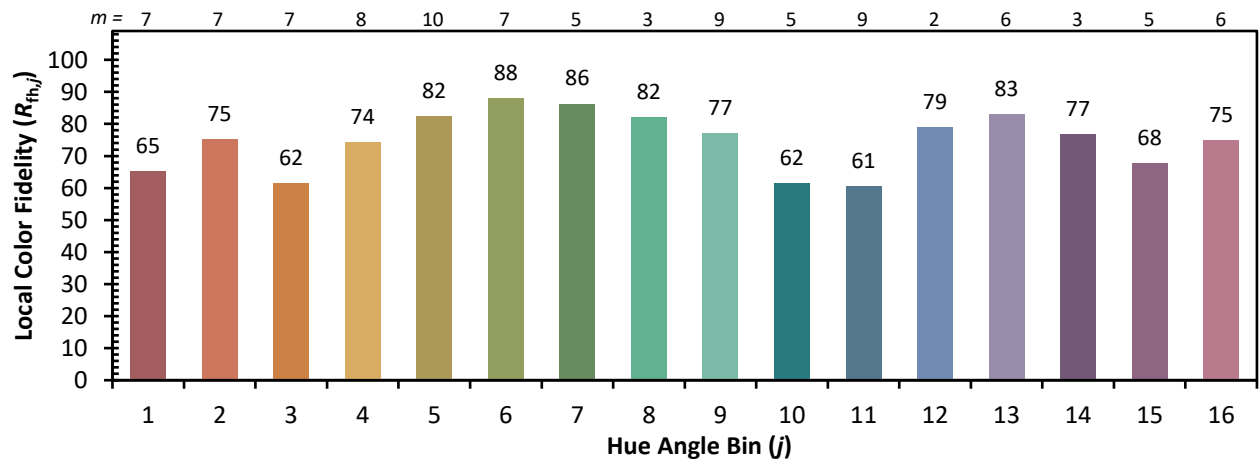
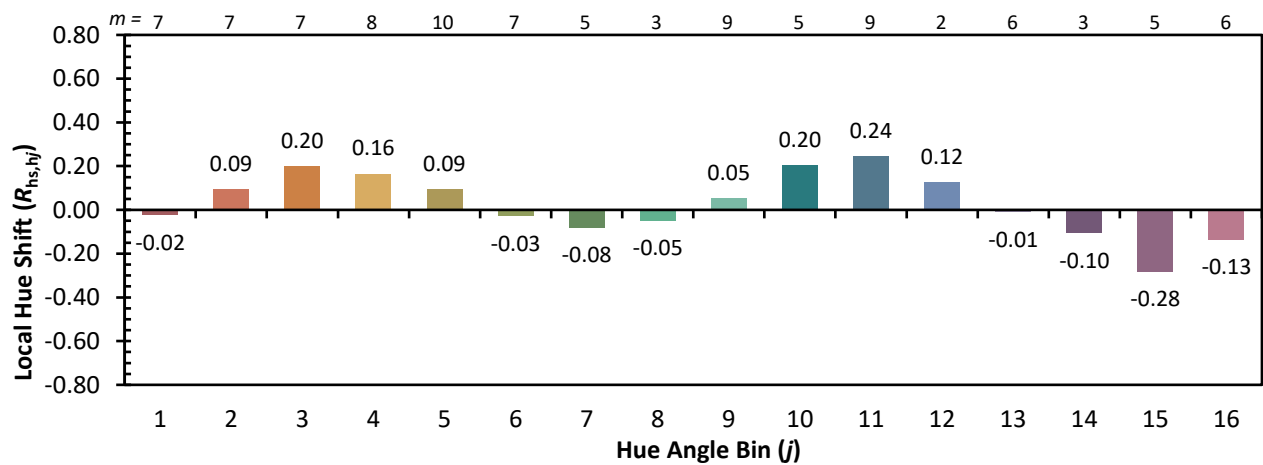
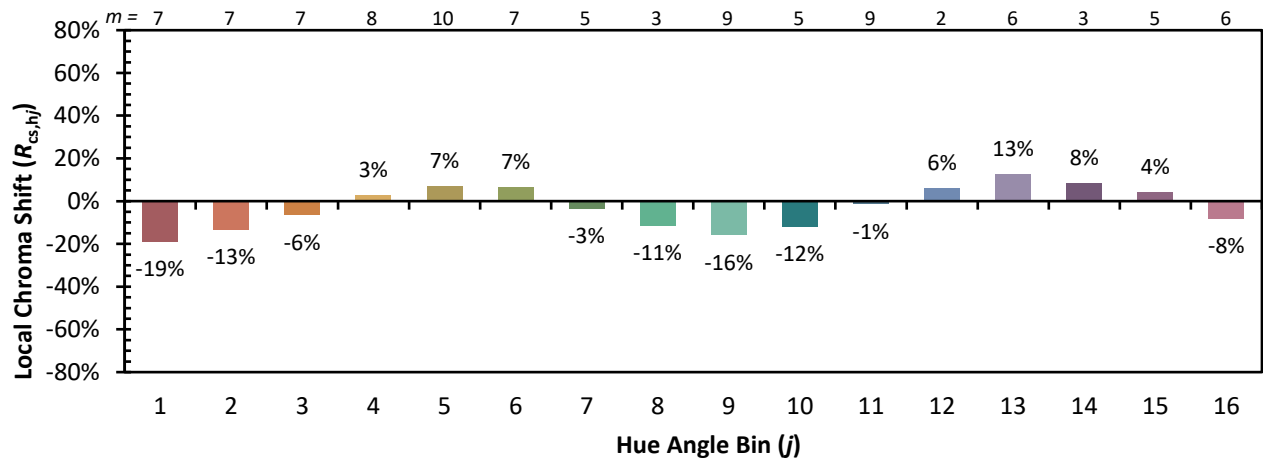


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

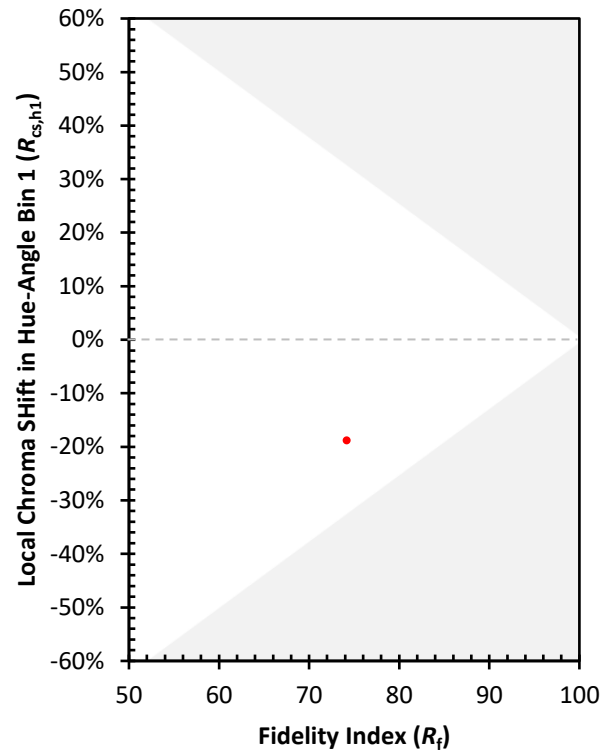
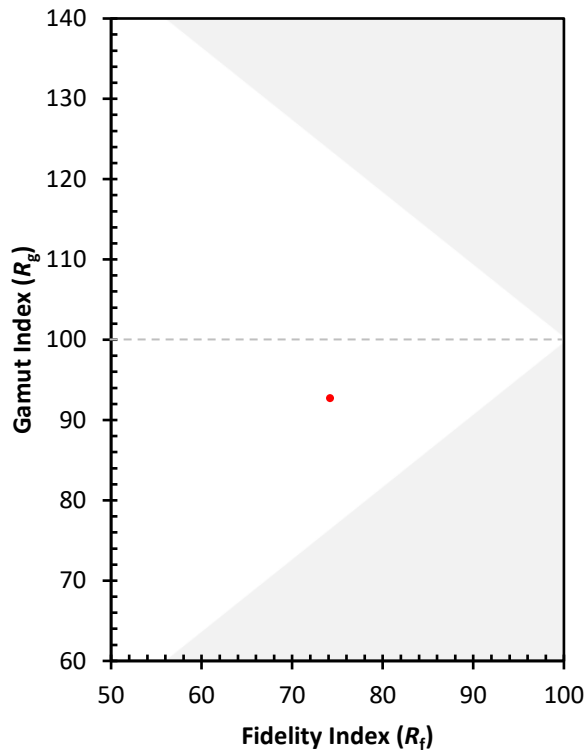
|            |            |            |            |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 63 | CES51 = 89 | CES76 = 51 |
| CES02 = 59 | CES27 = 89 | CES52 = 89 | CES77 = 68 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 69 | CES54 = 84 | CES79 = 80 |
| CES05 = 46 | CES30 = 88 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 72 | CES56 = 74 | CES81 = 79 |
| CES07 = 38 | CES32 = 63 | CES57 = 73 | CES82 = 91 |
| CES08 = 38 | CES33 = 82 | CES58 = 74 | CES83 = 90 |
| CES09 = 29 | CES34 = 70 | CES59 = 86 | CES84 = 85 |
| CES10 = 72 | CES35 = 83 | CES60 = 88 | CES85 = 78 |
| CES11 = 56 | CES36 = 88 | CES61 = 82 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 81 | CES87 = 77 |
| CES13 = 41 | CES38 = 98 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 97 | CES64 = 64 | CES89 = 73 |
| CES15 = 70 | CES40 = 91 | CES65 = 61 | CES90 = 80 |
| CES16 = 46 | CES41 = 96 | CES66 = 56 | CES91 = 72 |
| CES17 = 49 | CES42 = 80 | CES67 = 54 | CES92 = 58 |
| CES18 = 55 | CES43 = 79 | CES68 = 64 | CES93 = 75 |
| CES19 = 71 | CES44 = 99 | CES69 = 73 | CES94 = 53 |
| CES20 = 63 | CES45 = 87 | CES70 = 56 | CES95 = 64 |
| CES21 = 85 | CES46 = 85 | CES71 = 47 | CES96 = 76 |
| CES22 = 77 | CES47 = 90 | CES72 = 82 | CES97 = 86 |
| CES23 = 91 | CES48 = 80 | CES73 = 47 | CES98 = 76 |
| CES24 = 90 | CES49 = 83 | CES74 = 90 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 50 |            |



Color Rendition by Hue-Angle Bin



**Measure Comparisons**



(END OF REPORT)